Restricted distribution
Agenda item: 8.2

DBCP-XVIII/14
Paris, 27 August 2002
English only

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

WORLD METEOROLOGICAL ORGANIZATION

Eighteenth Session of the Data Buoy Co-operation Panel
(Trois Ilets, Martinique, France, 14-18 October 2002))

TECHNICAL ISSUES

Code matters

(Submitted by the Technical Coordinator)

This document reports on latest developments with regard to the implementation of the BUFR code within the Argos GTS sub-system. It also reports on implementation of the last version of the BUOY code at Service Argos.

The panel will be invited to comment, and particularly make decisions or recommendations, as appropriate on the following topics:

(a) Make sure to routinely provide Service Argos with buoy type, drogue type, and anemometer height information so that the information is properly encoded in BUOY reports and made available to the users;

(b) Invite interested centres to contact the Technical Coordinator for participating in the tests prior to operational distribution of BUFR reports;

(c) Decide on any other actions required regarding this issue.

1) BUOY code

New version of the BUOY code (FM-18-XII) was implemented by CBS on 7 November 2001. However, specific developments had to be conducted at Service Argos, and this version could only be implemented at Service Argos on the 27 March 2002. Since previous version of the code was compatible with the new version, late implementation at Service Argos had no operational impact for those meteorological centres who implemented new decoders as early as 7 November 2001.

New version permits in particular to encode the following new variables.

- Buoy type
- Drogue type
- Anemometer height
- For thermistor strings:
  - Length of cable
  - Hydrostatic pressure at lower end of cable
  - Indication whether depths are corrected using hydrostatic pressure sensor data

When the switch was made, new fields were automatically given adequate values when the information was known or could be easily deduced. However, this could not be done for all the buoys so the buoy operators were encourage to provide Service Argos with relevant information. This is still valid for newly deployed buoys: Buoy type, drogue type (if any), and anemometer height (if any) are important metadata which must be included in BUOY reports as much as possible. Buoy operators are therefore encouraged to provide the information routinely to Service Argos when deploying new buoys.

2) BUFR code

As recommended by the Panel at its 17th session, software development for the BUFR code was finally included in the Argos development programme by the 21st Argos Joint Tariff Agreement (JTA) meeting. Development project started in January 2002. Operational implementation is planned for early 2003.

At its last meeting, Prague, 22-26 April 2002, the Expert Team on Data Representation and Codes reviewed in particular template to be used for GTS distribution of buoy data in BUFR. Proposed template is given in annex A. Small changes might still be made to this template.

Before operational implementation of the BUFR code at Service Argos, tests will be conducted and test BUFR reports will be distributed to willing operational centres for decoding, notification of possible encoding problems, and correction of these problems. This will also leave some time for operational centres to tune their decoding software. Centres interested to receive such test BUFR reports are invited to contact the Technical Coordinator. Operational implementation of the new software within the Argos GTS sub-system as well as operational distribution of BUFR report will start when the produced BUFR reports will be properly encoded and accepted by those centres involved in the tests. Test period is expected to last for two or three months in early 2003. Operational distribution will therefore probably start in mid-2003.

ANNEX A

Proposed template for GTS distribution of buoy data in BUFR

(Excerpt from final report of ET/DRC meeting, Prague, 22-26 April 2002)
(Template updated in August 2002 following further discussion via email)

001003 - WMO region
001020 - WMO region sub-area
001005 - Buoy/platform identifier
002001 - Type of station
002036 - Buoy type
002149 - Type of data buoy
301011 - Date
301012 - Time
008021 - Time significance (value = “26" (time of last known position))
301011 - Date
301012 - Time
008021 - Time significance (value = "missing")
301021 - Latitude and longitude (high accuracy)
027004 - Alternate latitude (high accuracy)
028004 - Alternate longitude (high accuracy)
007030 - Height of platform above MSL
001051 - Platform Transmitter ID (CCITT IA5)
002148 - Data collection and/or Location system
001012 - Platform drift direction
001014 - Platform drift speed
002040 - Method of removing platform direction and speed from current
033022 - Quality of buoy satellite transmission
033023 - Quality of buoy location
033027 - Location quality class (range of radius of 66% confidence)
022063 - Total water depth
302021 - Waves
302022 - Wind waves
302023 - Swell waves
025025 - Battery voltage
002034 - Drogue type
007070 - Drogue depth
002190 - Lagrangian drifter submergence
025086 - Depth correction indicator
002035 - Cable length
002168 - Hydrostatic pressure of lower end of cable
020031 - Ice deposit (thickness)
306004 - Digitization, depth/salinity method, depths/salinities/temperatures
002030 - Method of current measurement
306005 - Time/duration of current measurement, depths/directions/speeds
007031 - Height of barometer above MSL
302001 - Pressure and pressure change
007032 - Height of sensor above marine deck platform (for temp.&hum. measurement)
007033 - Height of sensor above water surface (for temp.&hum. measurement)
012101 - Dry-bulb temperature (scale 2)
012103 - Dew-point temperature (scale 2)
013003 - Relative humidity
007032 - Height of sensor above marine deck platform (for wind measurement)
007033 - Height of sensor above water surface (for wind measurement)
002169 - Anemometer type
002002 - Type of instrumentation for wind measurement
008021 - Time significance (value = “2" (time averaged))
004025 - Time period in minutes
011001 - Wind direction
011002 - Wind speed
008021 - Time significance (value = "missing”)
004025 - Time period in minutes
011043 - Maximum wind gust direction
011041 - Maximum wind gust speed
007033 - Height of sensor above water surface (set to missing to cancel previous value)
007032 - Height of sensor above marine deck platform (for precipitation measurement)
004024 - Time period in hours
013011 - Total precipitation
007032 - Height of sensor above marine deck platform (set to missing to cancel the previous value)
008021 - Time significance (value = “3" (accumulated))
004024 - Time period in hours
014021 - Global radiation, integrated over period specified
008021 - Time significance (value = "missing”)